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X-RAY ASSAY LABORATORIES

LIMITED

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Henry F. Steger
Coordinator CCRMP
CANMET
Dept. Energy, Mines and Resources
555 Booth Street
Ottawa, Ontario
K1A 0G1

Dear Dr. Steger:

Please find attached our report no. 20644. We completed all elements requested for MP-1a, MP-2, CCu-1, CZn-1 and CPB-1. Also attached is a brief outline of the analytical procedures used for all determinations.

If you have any questions regarding this work, do not hesitate to contact us.

Very truly yours,

X-RAY ASSAY LABORATORIES LIMITED

J. H. Oppebeeck
Assistant Manager

JHO:slm
enclosure

MICROMEDIA

4 pp

Department of Energy, Mines & Resources - CANMET

Methods of Analysis on a Variety of Reference Materials

- General comments: All analyses were performed in one group. Along with these samples were run other CANMET reference materials, but most of the time they were used as controls and not as calibrating standards. We will be referring to this point specifically for each element.

- Reference material MP-1a
  . W determination was done by instrumental neutron activation analysis on a 0.5 grams sample. Results for TILG-1 and BH-1 were respectively 830 ppm and 4090 ppm W.

- Reference material MP-2
  . Sn determination was done by x-ray fluorescence spectrometry on a 32 mm pressed pellet. 4 grams of sample, 4 grams of sand, 0.5 grams of Sb internal standard mixture and 2 binder pellets were used. KC-1 diluted 4 times produced a value of 1620 ppm Sn.

- Reference material CCu-1
  . Fe determination done by x-ray fluorescence spectrometry on a 32 mm pellet. 0.1 grams of sample were fused with 5 grams of potassium pyrosulfate, ground and pressed.
  SCh-1 diluted twice produced a value of 30.2% Fe.
  . S determination done gravimetrically (precipitation of $BaSO_4$).
  Checks were run by x-ray fluorescence and we obtained an average value of 34.2% S.
  . As determination was done by instrumental neutron activation analysis on a 0.5 grams sample. Results for NBS-1632a and NBS-1633a were respectively 9.2 ppm and 145 ppm As
  . Se determination was done by graphite furnace atomic absorption spectrometry. 0.25 grams of sample were digested using HF, HNO_3 and $HClO_4$. Se (IV) was extracted with 2, 3 diaminonaphthalene. Results were checked with standard addition.

- Reference material CZn-1
  . Bi determination was done by flameless atomic absorption spectrometry using the hydride generation method.
  0.25 grams of sample were digested using HF, HNO_3 and $HClO_4$.
  Results were obtained using the standard addition method.
  . Se determination was done by graphite furnace atomic absorption same as for CCu-1.
  . Sn determination was done by flameless atomic absorption using the hydride generation method.
  0.1 grams of sample was fused with lithium metaborate, dissolved in nitric acid (dilute) and results were obtained using the standard addition method.

- Reference material CPb-1
  . Mn determination was done by atomic absorption spectrometry.
  0.5 grams of sample were digested using HF and aqua regia.
  . Sn determination was done by flameless atomic absorption using the generation method.
  0.5 grams of samples were fused with Na_2O_2, dissolved and results were obtained using the standard addition method.
  . Se determination was done by graphite furnace atomic absorption same as for CCu-1 and CZn-1.

RESULTS OF ANALYSIS

Laboratory - X-RAY ASSAY LABORATORIES

Bottle Number - MP-1A = 692 MP-2 = 509 CCu-1 = 697
CZn-1 = 601 CPB-1= 169

	MP-1a	MP-2	CCU-1
	ppm W	ppm Sn	% Fe
1	458	390	31.64
2	454	360	31.58
3	443	360	31.58
4	447	360	31.55
5	447	380	31.61
Sample wt (g)	0.5 g	4 g	0.1 g

	CCU-1		
	% S	ppm As	ppm Se
1	34.0	49	130
2	33.6	51	130
3	33.9	50	138
4	33.9	51	144
5	34.0	53	140
Sample wt (g)	0.5 g	0.5 g	0.25 g

	CZN-1		
	ppm Bi	ppm Se	ppm Sn
1	30	5.4	65
2	28	5.4	68
3	29	5.5	65
4	27	5.4	63
5	27	5.4	68
Sample wt (g)	0.25 g	0.25 g	0.1 g

	CPB-1		
	ppm Mn	ppm Sn	ppm Se
1	410	210	32
2	410	210	32
3	420	210	33
4	420	220	32
5	410	210	32
Sample wt (g)	0.5 g	0.5 g	0.25 g